

# **Potentiometric Surface Map of the Bedrock Aquifers of Cass County, Indiana**

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Cass County, Indiana is located in the north-central portion of the state with all of the areal extent of the county situated within the Upper Wabash River Basin.

The potentiometric surface mapped (PSM) contour elevations represent lines of equal elevation relative to the measured groundwater levels in wells. In general, wells completed in a confined aquifer system are bound by impermeable layers and will have static water levels under hydrostatic pressure causing the water level to rise above the elevation of the aquifer resource. In contrast, an unconfined aquifer system is not bound by impermeable layers; therefore, the water level will not be under hydrostatic pressure and will not rise above the aquifer resource. Static water level measurements in individual wells used to construct the potentiometric surface map are indicative of the water level at the time of well completion. Therefore, current site specific conditions may differ due to local or seasonal variations in measured static water levels.

Coordinate locations of water well records were physically obtained in the field, determined through address geocoding, or reported on water well records. Elevation data were obtained from a digital elevation model (DEM). Elevation and location quality control/quality assurance procedures were utilized to refine or remove data where errors were readily apparent.

In Cass County depth to bedrock ranges from surface exposure to more than 300 feet with wells completed in carbonate deposits of the Silurian and Devonian Carbonates Aquifer System. There are 941 located wells that are completed in bedrock and utilized towards the mapping of the bedrock potentiometric surface. However, much of the northern portion of the county is lacking in data and/or covered by more prolific unconsolidated deposits that limit the necessity to complete wells in bedrock. Therefore, potentiometric surface elevation contours have not been extended through these areas.

Potentiometric surface elevations range from a high of 790 feet mean sea level (msl) along the south-central part county, to a low of 560 feet msl in the southwest-central corner of the county along the Wabash River. Generalized groundwater flow direction for the county is towards major drainage relevant to the basin. Therefore, groundwater flow is towards the Wabash River and associated tributaries for much of the county. To the northwest, however, groundwater flow is north-northwest out of the county towards the Tippecanoe River. In the southern third of the county groundwater flow is towards Deer Creek.